

ABSTRACT

Surface modified solid polyethylene and high density polyethylene products, together with compositions and methods for producing these products, are provided. Polymer coatings comprising vinyl, urethane, and/or epoxy are covalently grafted to polyethylene substrates. The grafted coatings optionally colorants, flame retardants, and the like, that impart desired improved properties to polyethylene substrates. Grafted substrates include, for example, boards, sheets, tubing, pipes and the like. The treated products are more fire resistant than untreated polyethylene and unlike untreated polyethylene, are also capable of retaining post-manufacturing paint, markings, or adhesives, as desired.